ON THE

MINERAL-WATERS

OF

CARLSBAD IN BOHEMIA.

By

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Among the great number of remedies, which medicine employs, *common water* has always been considered as one of the most efficacious. If common water already by its purgative qualities, is of benefit, *mineral water* must act still more energetically by the elements, which it contains, and to which a principle not less active, is added viz. heat.

The waters of Carlsbad, whose reputation dates of many hundreds of years, are known almost in the whole world. Experience has confirmed the high opinion, which science and practical medicine formed of them. Thousands of invalids arrive there every year and a number of them owe their health and life to the use of these waters.

The annals of all nations have their share of interesting observations on the utility of these waters. The great and always increasing number of patients, the numerous physicians, who arrive here for their own sake, or for observation, are as many testimonies of the consideration these waters have obtained in the whole world.

In truth, they are looked upon as the last refuge in many maladies of the abdomen. To make Carlsbad known in England, which to this instant sends only a limited number of patients, the following lines are written. They will give some idea of the chimical and physical nature of our waters, of their efficacy and application in a variety of maladies.

The quantity of mineral water, furnished by the Carlsbad springs is hardly calculable. There are 9 springs; the principal one, called the Sprudl, gives 40 kilderkins of water in one minute. This water, when in contact with the air gives a sediment, which forms a hard mass, called Sprudelstein (Stone of Sprudl), able to

be polished and worked out into different articles. This sediment formed in course of time a crust of stone, which covers in a great extension cavities, filled with boiling water, the quantity of which seems to remain always the same. *The specific weight,* as constated by Berzelius is 1.400; it is therefore heavier than pure water or that of any river, without colour and odour. Exposed to the air during some time it is decomposed, but in well corked bottles it remains unaltered. This last quality renders it able for exportation.

The taste of the water is not disagreeable, though slightly acidulous and salt. *The temperature* does not change and it is not altered by the temperature of the air; it varies only in the springs themselves.

That of the Sprudl	is	59°	of Reaumur	=	165°	of Fahrenh.
„ „ „ Neubrunn	„	50°	„	=	147°	„
„ „ „ Muhlbrunn	„	47°	„	=	127°	„
„ „ „ Schlossbrunn	„	37°	„	=	118°	„
„ „ „ Theresienbrunn	„	36°	„	=	123°	„
„ „ „ Marketbrunn	„	+ 2°	„	=	139°	„

As all the springs have the same chimical composition and vary only in temperature, it is almost certain, that they have the same origin in a primitive source. During their course towards the surface they lose a part of their heat in proportion of the length of the way, they have to run.

The explication of *the origin* of the Carlsbad waters has always remained hypothetical, but it is most credible that atmospherical water after having penetrated into the interior of the earth, is warmed there by the natural heat of the boiling centre of the earth. Conform to this theory, according to which temperature augments one degree of Reaumur at 120 feet of depth, the Sprudl with 59° would rise from a vertical depth of 700 feet.

As *to the ingredients* of the Carlsbad water, the analysis made by Hugo Göttl, a distinguished chimist, has shown that they are the same in all springs. He has found at the same time in the granite of Carlsbad all the mineral substances, contained in the water, which shows, that the granite is the very true furnisher of all ingredients dissolved in the water.

The *first analysis* of the Sprudl was made in 1789 by the celebrated physician David Becher. He is the author of a treatise

on the waters of his birth-place, which thanks to the quantity of its materials and the exactitude of its observations has served as basis to all later accounts about Carlsbad. Nothwithstanding the inferior state of chimistry at that time, Becher found out all the principal ingredients and even their true proportions. Though he, of course, could not mention substances, discovered of recent date, such as Brom, Selen, Jodine etc., still it is astonishing to see the exactitude, with which he has determined the quantities of Sulphate and Carbonate of Soda and Potash, which with the Muriate of Natron (Soda) form the principal part of our water. He is also the inventor of a very easy and unexpensive manner of preparing Carlsbad-salt by evaporation of the water. One pound (= 7680 grains) of mineral water contains:

Sulphate of Potash	9.369
„ of Soda	14.960
Chloride of Sodium	8.724
Carbonate of Soda	9.062
„ of Lime	2.013
„ of Magnesia . . .	0.399
„ of Protoxid of Iron	0.030
Alumina	0.012
Silica	0.052
Total of fixed ingredients	42.627.
Carbonic acid gas	7.80337.

All analyses demonstrate the perfect identity and invariability of our waters. To explain their effects on the body it would be in vain to attribute to each of their elements a specific virtue in one malady or other. The totality of ingredients give their salutary force. None of the substances is superfluous, and each contributes to their medical efficacy, and in this, as it seems, consists the superiority of natural remedies on those combined by human intelligence.

Still there are in the water of Carlsbad ingredients, the action of which is well known. Such is their peculiar temperature, the carbonic acid gas, such are the alkaline salts.

We may, therefore, reasonably explain at least part of their effect. I pass in silence the influence, which one owes to the change of air and diet, to travelling and the other conditions of

a Carlsbad cure; I will only speak in particular on the way, in which a man takes the waters, and in which they act on the body.

It is certain, that the principal effect of Carlsbad lies in its *alterative action,* that is in the production of new organic matter, which forms itself insensibly by the regularisation of secretions and excretions, and by the reparation of all vital processes. Though our water acts as a purgative in a moderate degree upon most patients, still after having taken it for some time, it produces upon many people the contrary effect, and renders the evacuation irregular and defective, which shows that these waters are *rather dissolving than purgative.*

This last effect is prevailing in the cold alkaline water, *e. g.* in that of Marienbad.

Another not less important effect is *the diuretic action.* The abundant urine is generally clear and inodorate, only during the crisis it becomes troubled and of a disagreeable smell, and deposes a reddish sediment. Cases of small stones going off during the cure, are not rare.

Equally, the *perspiration* is augmented; critical perspiration characterized by a special smell appears during the cure. Eruptions on the skin appear not unfrequently. Jaundice disappears quickly. In short, all secretions are augmented.

Appetite diminishes at the beginning of the cure, but it regains soon after a new vigour. The taste is often changed, the tongue charged, expectoration augmented. Many of our patients are vexed by flatulence, or they feel a high degree of lassitude and depression; but this unpleasant state goes away in proportion, as the disease is radically cured.

A flux of hemorrhoids, or a paroxysm of gout in form of podagra happens not unfrequently during the cure, with subsequent considerable relief of the complaint. Congestions of the blood towards the head are very rare, because warm mineral water is generally better supported than cold.

The medicinal power of the mineral springs of Carlsbad may be stated as the following:

1. They excite and vivify the ganglion-system;

2. they purge softly the stomach and the bowels, dissolving the morbid matters accumulated there;

3. they destroy the acidity of the primae viae, and calm the irritated nerves by means of the high temperature as well as of the carbonic acid gas, becoming therefore an antispasmodic remedy;

4. they excite the mucous membrane of the alimentary canal, promoting its peristaltic motion as well as the intestinal secretions; in consequence of what they cause more copious evacuations, and augmented expectoration;

5. they accelerate the absorption and secretion of the skin and in the urinary passages, and act therefore as a sudorific and a diuretic remedy;

6. they attenuate and liquefy the condensed bile, the stagnated blood in the venous-system, the coagulated lymph in the lymphatic vessels, and in the glands of the abdomen;

7. they correct and improve the quality of the liquids, changing their composition, and climinating the acrid matters of the blood; they become therefore an antidyscrasic remedy;

8. they regulate and pomote the circulation of the blood, particulary in the venous system;

9. they expel from the urinary organs sand, gravel and calculi, destroying the formation of morbid deposits;

10. they have often proved very beneficial in many serious disorders, produced by occult causes, and where every treatment had been unsuccessful.

From all these experiences results, that the Carlsbad waters act most powerfuly on the abdominal organs, particularly on the liver, the spleen, the bowels, the stomach, the kidneys, the lymphatic glands, the urinary and sexual organs;

that Carlsbad is highly reputed as a chief-remedy against the chronical affections of the abdomen, if they arise from *plethora abdominalis*, that very frequent disease, the forms of which are as numerous as various, such as hypochondriasis, hysteriasis, piles, swelling of the organs, jaundice, biliary calculi, gout etc.;

that the high temperature of these waters augments considerably their power against those maladies, particularly if they are combined with disorders of the nervous system. In such cases Carlsbad is quite preferable to the cold alkaline waters, which excite by irritation.

The special cases, in which Carlsbad is acknowledged by the experience of centuries as very efficacious, are stagnation, mucosity and acidity in the digestive organs, dyspepsy, flatulence, cardialgy, chronic vomiting, costiveness, diarrhoea, hypertrophy of the liver, jaundice, biliary calculi, swelling of the spleen in consequence of intermittent fever, or of suppressed hemorrhoids.

In urinary calculi, Carlsbad is considered as a specific for its alkaline nature. It has been also employed with success in the diabetes.

In chlorosis and sterility, if they are caused by disorders of abdominal circulation, our waters prove very beneficial; but they are the very true panacea in gout of every form. The internal use of Carlsbad must always precede the cure with bathing in sulphurous or in sea water.

As to the diseases of the nervous system, Carlsbad can be only of use in that sort of affections, which are the reflex of abdominal disorders based upon a higher venosity, in short in all secundary nervous complaints.

The following histories of maladies I have selected to prove the special indications of Carlsbad waters, may corroborate what I have mentioned about theis efficacy.

Biliary calculi.

Violent pains in the liver, the sudden cessation of those pains, a visible change in the complexion and even total jaundice leave no doubts about the existence of gall-stones, although their passage through the alimentary tube may be considered as the only irrefutable proof. But they cannot always be detected, many patients being too careless about their investigation. Carlsbad is particularly efficacious in such cases.

An Italian nobleman voided daily, during two months a number of gall-stones of very different size, some of which were of sky-blue colour, which he called his *turquoises.* The continual production of these concretions caused him continual borborygms and colic. This patient after having taken during six weeks the Carlsbad water returned to Italy, and came back in the next year. The evacuations of gall-stones were as copious as before. He passed more than 200 in one day. The chalybeate waters of Franzensbad, which he tried, stopped the evacuation; therefore he

went again to Carlsbad, where as soon as he began to drink, the former excretions took place. After a second cure of six weeks he observed a real and constant diminution of the concrements.

Gout.

The most frequent disease in our days, is the product of bad erraneous sanguification and of irregular activity of the nervous system. Blood is abundant in saline substances, which are retained and accumulated in the organs of secretion and excretions. Gouty complaints are always combined with abdominal disorders, and in general more successfully removed by abundant urine and large perspiration, than by copious alvine evacuations. A proper regimen is indispensable during the cure and even after it. A very interesting case of gout and its curing by Carlsbad is Dr. de Carro's own, which he relates in the following terms:

I was born in 1770 counting, on the fatherly side, four gonty generations. When 35 years old, I began to feel this inheritance by a severe fit of podagra, which lasted a fortnight, after which my foot remained a long time weak and tender, but without any other ailment. A few weeks, sometimes many months elapsed, without any attack. In 1822, the podagra disappeared suddenly on the third day, and produced the most alarming symptoms: cough, dyspnea, sleeplessness, intolerable tickling of the throat; copious puriform and acid expectoration, rapid decay, cadaverous complexion, in short, all the fore-runners of a tracheal consumption. Leeches, guaiac, Plummers powders and particularly goat's-milk restored me, but I never lost a painful sensation of stricture in the trachea, so that the air I breathed seemed to pass over an ulcerated surface, and my voice, like a good hygrometer, following the atmospheric variations, was extinct in damp weather and returned when dry. A little before my departure from Vienna in April 1826, the same symptoms returned, but with less general weakness and emaciation than formerly. In spite of the alarming state of my lungs and trachea, which counter-indicated the use of the waters, and attending merely to the arthritic principle, I began to drink on the 17th May. On the fourth day I felt a vertigo, lost my appetite, was unable to stand upon my legs, my eyes were sparkling, my cheeks burning, and I had almost apoplectic feelings. These violent symptoms lasted only two days, after which I continued, during six weeks, to drink seven beakers

of Neubrunn, beyond which I could never go. I was very little purged, but the excretion of a fetid and oily urine lasted as long as the use of the water. Gradually all my complaints disappeared, and I was fortunate enough to get completely rid of a large herpetic eruption on the neck, which had annoyed me beyond expression during six years, and had resisted a variety of remedies and even sulphureous fumigations. My health has been since and is still 1856 perfect.

Hypertrophia of the Liver.

This frequent disease consists in hyperaemia (augmentation of the volume produced by overfilling of the liver with thick and viscid blood or bile in the venous and bilious capillary vessels) and is a very frequent consequence of endemic diseases of the tropical Zone, and thereby frequent among English people living in India. They will find a radical help at Carlsbad, if the substance of the liver itself is simply hypertrophical or indurated after inflammation; but little is to be expected, if this augmentation is produced by infiltration of the organ with scirrhous substance.

During my residence of ten years at Jamaica, where I was continually exposed to all changes of temperature with all the troublesome duties of a physician in a large parish, I had many attacks of the intermittent bilious fever, that formidable scourge of the Antilles.

Annually towards autumn, when the heat is simultaneous with excessive dampness, this disease becomes epidemical. In September last I had a violent attack of it, and thanks only to the strength of my constitution, I did not succomb like so many others. In spite of my reconvalescence my whole system was completely deranged. The right lobe of my liver was indurated, the spleen hypertrophic, the venous system much obstructed, the skin coloured from the bile, the digestion impaired, the peristaltic motion of the bowels entirely suspended and without other evacuations but those, which are produced by aperients. During two months I used tonics and light stimulants but without any great benefit. The debility was augmenting daily; at the end of December my complaint became worse rapidly, with cachexy and swelling of the feet, I took the resolution of returning to Europe for the benefit of a more temperate climate and the well known

advantage of a sea voyage in simular cases. I left Jamaica without delay, but on my arrival at Barbados I had a new fit of fever, during which my costiveness was such, that the strongest drastics could not produce any effect, and that I was delirious for several days. Finally evacuations took place and saved me, but they were produced by means, which European physicians would declare monstrous; I used indeed forty grains of Calomel combined with five drops of Croton oil in three doses, in twenty four hours. I was obliged to spend some weeks at Barbados with the hope of recovering strength enough for the continuation of my journey. I arrived at London towards the middle of March. My appetite and digestion were much improved by the voyage, so that I wanted no more aperients; but my liver and spleen remained much affected with great debility. The swelling of my feet alone disappeared, but my complexion remained bilious. In this state I was ordered to Carlsbad, where I arrived the 18th of June, and the next day I began to drink under your direction. The result is astonishing: *I return home quite recovered.* For the edification of my own countrymen I like to add the remark, that the wonderful efficacy of your springs is happily supported by the uncommon beauty of the country itself, which invites to many delightful walks in agreeable society composed of persons of all nations, entirely devoted to the dolce far niente, and by the rare enjoyment of Labitzky's excellent and national band of music.

Dyspepsy.

Most of our invalids are affected with this disordered state of the digestive organs, that can be considered as an evil and as the first stadium of various chronical maladies. Dyspepsy, originated in an anomaly in the secretion of the stomach, with subsequent disturbed chymification, and characterized by its numerous symptoms is well known as a prevalent disease in England.

Carlsbad is a capital remedy against dyspeptic complaints, and of the greatest value in preventing the development of more fearful dyscrasies.

„In consequence of some years' residence in the torrid zone my liver was affected and the digestive organs were excessively impaired. I suffered from dyspepsy in all its forms. On my

return to England my mode of life and habits were quite unfitted to the restauration of my health: late hours at night and late rising in the morning, hot rooms and a luxurious table. I tried the waters of Harrowgate, Cheltenham and Leamington, but with the only benefit, that my rheumatism and the herpetic eruption, which I had on the legs and the arms were improved, all those symptoms being produced by bad digestion. Doctor's fees and apothecary-bills would have formed a small fortune, and I derived from them no benefit; scarcely did I obtain any relief whatever. I visited six times Carlsbad, where I always drank three cups of the Muhlbrunn and seven of the Sprudel. During the whole course of those six years I was never obliged to keep my room for a single day on account of any disease. This I willingly certify with the warmest feelings of gratitude towards Carlsbad." (Letter written by the patient himself.)

The cases, in which Carlsbad water is decidedly hurtful are generally:

Acute fever and inflammation of the organs, organic faults of the heart and the large bload-vessels (aneurism, ossification of the valves), active congestions, hemorragies, pulmonary consumption, desorganization and suppuration of important organs, open cancer (paralysis), palsy, dropsy, scurvy, softening of the brains or the spinal marrow, marasmus, all discrasies with the character of vital exhaustion.

Carlsbad will help very little or nothing in diseases of the nerves, such as epilepsy, mental aberration, secundary syphilitic affections, pseudo-plastic tumors, medulary sarcoma, calculi of too large size etc. etc.

Having asserted the perfect identity of our mineral springs admitting no other real difference between them, except in their temperature and the quantity of carbonic acid gas we must vindicate to this late circumstances the different effects which are to be observed in the one and in the other of our patients at their use. Nobody however will be surprised to see, that the Sprudl with 165° + F. acts in another way than the Theresienbrunn with 118° +. It is a fact, that the hot springs have a more penetrating and exciting action on all the systems of the

organism and that they calm at the same time the nerves, when they excite the torpid mucous membran, or the languid circulation in the blood vessels.

But it is also confirmed by experience, that certain individuals have a kind of elective affinity for one particular source and that a rational treatment requires to respect *the idiosyncrasies*, which are nowhere else of higher importance than at Carlsbad. It is evident, that nobody should consider these waters as harmless, which may be used for a pastime or without medical advice and guidance. Such imprudence would never be performed with impunity.

The season at Carlsbad begins generally with May and ends with October. The usual duration of a cure is of 4. 6. 8 weeks, and the common dose of water taken every morning before breakfast, are 8. 10. 12 cups.

Bathing combined with drinking is in great use at Carlsbad and it is considered at a powerful assister of the internal cure.

I shall end this sketch, adding some short notices about the town of Carlsbad itself and about living there etc., such notices being of great interest to strangers who intend to visit this place.

Carlsbad is situated in Bohemia at the frontier of Saxony and Bavaria. In a short time it will be joined by rail-road to the principal lines of Europe. From England one can go there in 4 days by Ostende, Cologne, Leipzic, Schwarzenberg, or by Francfort, Hof, Eger. The town has nearly 6000 inhabitants, all Germans, more than 650 houses and most of them have good lodgings for strangers, besides the numerous inns, where people at their arrival find a comfortable station. The price of lodgings varies according to their situation, size and elegance, but particularly with the increasing or declining season. A single room well furnished is to be had for 4—6—8 florins (= 4—5 shillings) a week; larger lodgings with 2—4 rooms cost 15—25—36—50 florins.

The top of the season is in July. People dine generally at the eating houses, as German fashion does not forbid ladies and gentlemen going out for their dinner; there is no table d'hôte. Living is calm and quiet, without constraint. Every body has full licence to live at his pleasure. Who likes society, can meet plenty without all circumstances, and even of the best kind; who prefers solitude, is master to enjoy it in full degree, our woods and mountains offering a large field for solitary excursions.

Game of hazard is strictly prohibited as incompatible with the seriousness of a cure.

As there are many other amusements, beside the number of nice walks such as the theatre, balls, concerts, excellent music, a reading room, libraries, shooting, fishing etc. etc. nobody can complain of tediousness.

The renown of Carlsbad not depending from the fashion nor from the variable theories of science, but merely from the experience of centuries, augments every year and gives to this place the first rank amongst the watering-places, which are always considered as a sacred refuge against the very frequent diseases of the abdominal organs.

On the Exportation of the Mineral Waters of Carlsbad.

Although the waters of our neighbouring Spas, Marienbad and Franzensbad have these many years been exported, it is only of late, that general attention has been directed to the exportation of ours, from an opinion perhaps, which has hitherto prevailed, that cold water alone could bear transport.

This opinion however can no longer be maintained, since innumerable experiments have proved the contrary. A new field of usefulness, which prejudices alone had not allowed to be cultivated, is thus opened and the incalculable advantage, which suffering humanity derives from the use of *water-cures,* so much in vogue in our days, more widely and generally extended. The great number of establishments, which are formed every where, both for drinking and bathing, sufficiently proves the indispensableness of such natural remedies, and that their efficacy is universally acknowledged.

That the mineral waters of Carlsbad can be exported, without losing any of their virtues, and that their salutary effects are experienced at any distance from the spa, we can make evident to any intelligent and candid reader by one or two facts and observations; we say candid, because we are aware, that there are many, whose interests are seriously compromised by this innovation, and who will naturally endeavour by all means in their power to discredit our testimony in its favour.

The waters of Carlsbad owe their virtue to two very important agents, viz. their temperature and their chemical composition. They exhibit however great differences in the quantity

of their volatile parts, the most essential of which is the carbonic acid gas bound or free, on which depend the intimate union and adhesion of the solid ingredients of these waters. Though this gas in the less warm springs is to be found more intimately united with the earthy and metallic bases than in those, whose higher temperature favours its escape, and although the former adapt themselves better to exportation, it is notwithstanding possible, in spite of the high degree of heat, which characterizes the latter, to preserve them unaltered and to drink them with success at any distance from the well. For such an advantage we are indebted to an admirable invention in the manner of closing the jugs.

The great quantity of carbonic acid gas found in the Schlossbrunn, which forms bicarbonates with all the bases affiliated to it, and still remains partly free, renders the mineral water of that spring easier to be kept. * The peculiar advantage offered by the method of filling and corking jugs, invented and improved by Mr. Hecht, consists in this, that by means of it the access of athmospheric air is carefully excluded, with the additional advantage, that at the same moment, when the jar is being corked, the space found empty between the cork and the surface of the water is filled up by the immission of carbonic acid gas, which prevents its decomposition, of which abundant proof has been already furnished. The water contained in jugs thus corked has been found after several months perfectly pure, clear, unaltered and without sediment. At a meeting of the Imperial Society of physicians at Vienna professor Pleischl examined some of this water, which had been kept for a year, and found it in perfect condition. 100,000 jugs have been exported without a single complaint about the state in which they reached their destination, not excepting those containing the Sprudel, which of late has been even in greater demand than the other sources. As to the second agent of the Carlsbad waters, the temperature, we cannot but attribute a part of their curative effects, viz. of penetrating,

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* The Schlossbrunn water has only 108° F. and contains in 16 ounces 17,37673 Paris cubic inches of carbonic acid gas; the water of the Theresienbrunn with a temperature of 123° F. contains 15,4220 of the same cubic inches; whilst the Sprudel water 165° F. contains 7,80327 space parts of the same gas.

of dissolving, altering, stimulating and animating the system and of calming spasms. Without attempting to discuss the numerous theories, which have been invented to explain the cause of thermal heat and the influence, which it exercises on the chemical nature of the other parts of a mineral water, or without recognizing as a special principle the so called telluric-electric-magnetic galvanism, by the aid o which it has been attempted to explain the mysterious properties of the waters, it is certain at least that there does not exist any essential difference between natural and artificial heat, nor is there any to be observed in their effects. This fact has been clearly demonstrated by experiments made here by Professor Pleischl in 1844, who could discover no difference whatever in the time required for their respective cooling, between the water of the Sprudel and common distilled water, which had been heated to the same temperature.

In all important respects therefore it must be allowed that the Carlsbad water, exported in well corked jugs and heated gradually to the required temperature, contains the virtues of the water as drawn immediately from the spring. The greater efficacy (impossible to be denied) of the waters drunk at their source, may be ascribed to causes rather accessory than principal, viz. for example, to the constitution being prepared for the action of the waters by the journey and change of air, to the operation of the waters being assisted by the local physicians, who must be supposed best acquainted with the properties of the water, added to the greater faith, which the invalid himself generally has in the waters, when drank in their source. Their operation is moreover in many cases greatly increased and accelerated by the use of baths of the same water, which of course can only be had at the sources themselves. Though for these and such like considerations a course of the waters on the spot is to be preferred for all those, who have leisure and means to accomplish it, yet for those who are not so circumstanced, we have no hesitation in recommending the exported waters. There are cases moreover in which these serve as a most valuable auxiliary to the former; viz. when the disease is such, as will not admit of delay and yet the season of the year is unsuitable for a continental journey, or where the morbidness of the system makes a mild preparatory course advisable, previous to undergoing the severity of a regular

course of the spa. Among these cases may be mentioned gall-stones and catarrh of the urinary bladder, when the violence of a paroxysm demands prompt alleviation; hemorragies and excitement of the vascular system, in which cases a preparatory course made at home will produce the necessary evacuations and favourably prepare for the principal cure to be accomplished at the spa. Further, in cases of obstructions and constipations, indigestion, piles and other cases of imperfect circulation, swelling of the liver and of the spleen, diseases of the urinary passages and in short in all cases, where it is less important to act on the skin than upon the intestinal tube; where any delay in the application of the appropriate mineral water might be attended with the worst consequences, in which cases moreover a higher external temperature during the course is less necessary than in disorders, where the skin is to be principally acted upon.

There exist, besides, cases in which the use of thermal waters, though in all respects suitable, is wholly inadmissible at the spa season, viz. in the heat of summer, such for example, when there is a tendency in the constitution to congestion or profuse perspiration.

Lastly the exported waters may be advantageously employed as an after-cure, when invalids (as often happens) are compelled by unforeseen circumstances to quit the spa without having completed their regular course, or are prevented from returning in the following season. In either case the cure can by means of the exported waters be followed up at home, as was done by Dr. Damianos at Athens, and several others; whereas, were it not for such an arrangement, the cure having been interrupted during the action of the waters, would have likely failed, and in some cases the disorder been increased by their partial use.

With regard to the artificial waters used in remote places as a substitute for the natural springs, their value as an addition to our curative treasures is unquestionable, and they are a great blessing for thousands, who cannot resort to the former. Yet it would be too much to advance, however scientific their composition and successful their imitation may be, that they are equal to the natural waters; for though they may have all their *known* ingredients, as discovered by chemical analysis, they cannot have those that are *unknown*, and which have hitherto baffled all che-

mical investigation. We doubt not they are the causes of many of the salutary effects, we observe to be produced by the use of these waters.

The mode of using the exported mineral water of Carlsbad and the regimen to be observed are in general the same, as when drunk at the spring, viz. moderation in eating and drinking, exercise in open air, in one word, prudence and temperance. Peculiar prescriptions can only be given by the attending physician, who must direct himself according to the individuality of the patient and the observed effets of the water. Every morning a jug containing six beakers of water should be drunk, with the interval of a quarter of an hour between the beakers, occupied in walking about the room, or, if the weather allows it, in open air.

If the debility of the patient is too great, he can drink in his bed. The water, according to cases, can be administered cold or warm. It can easily be warmed by placing the jug in hot water and leaving it there till it has attained the proper degree of heat. * If the water does not produce a sufficient effect, a little Carlsbad salt must be dissolved in it.

The following reports have all been received in the year 1844.

Dr. Folwarčzny, physician to the Generalhospital of Vienna, relates the case of a civil officer 32 years of age, who in consequence of long sedentary occupation laboured under costiveness, flatulency, eructations, disagreeable taste in the mouth, jaundice etc. After a solvent treatment his complaints diminished; in 1840 however they increased to such a degree, that a considerable weakness was the consequence, followed by a total paralysis of the feet, which obliged the patient to use crutches. During the years 1841 and 1842 he tried the baths of Hall (in Tyrol) without success. In the year 1843 he entered the General-hospital of Vienna, excessively thin and weak, with the tongue much loaded,

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* It requires 2 minutes 20 seconds for that of the Schlossbrunn with + 37° R. = + 127° F.
do. do. 3 minut. 16 seconds do. of the Muhl- and Marketbrunn with + 45° R. = + 127° F.
do. do. 3 min. 50 sec. do. of the Neubrunn with + 50° R. = + 147° F.
do. do. 5 min. 9 sec. do. of the Sprudel with + 59° R. = + 165° F.

and incapable to move his feet. The muscles were relaxed and soft, the abdomen inwardly sunken, with habitual constiveness. The cure began with a jug of Schlossbrunn daily, assisted at first by an injection. After 8 days the evacuations became regular in every respect. In the middle of August the patient was already able to move with the help of his crutches. Good spirits, appetite, easy digestion, sleep, all returned gradually, the legs became stronger and on the 30th of October the patient went home in good health.

Dr. Pittner, physician to the same hospital, relates the case of a chronic inflammation of the liver, which at first antiphlogistically treated, was much ameliorated by the Carlsbad water drunk during 4 weeks, and which would have been completely cured, if the water itself had not failed. The same physician quotes also two cases of various ulcers of the thigh, in which the exported water of Carlsbad proved very beneficial. The first was a man of 58 years of age with palsied inferior extremities, in consequence of liver-obstruction, a great drinker, subject to piles, incapable of standing on his legs, inactive bowels, stools like clay, difficulty of making water, the liver large, hard and painful, some symptoms of jaundice. Towards the end of the cure a purulent matter was observed in the stools and urine and the piles began to flow. The patient recovered his health.

The second case was that of a woman with a liver tumefied and a swelling of the right ovary, which disappeared after she had drunk 35 jugs of Schlossbrunn. The patient has previously been unsuccessfully treated with opening medicines. In the case of a woman of 41 years of age with a dropsy, the induration of the liver disappeared after she had taken 30 jugs of Carlsbad water; the secretion of urine increased considerably; the menstruation, which had been suspended half a year, reappeared and the patient was restored.

Speaking of the general effects of Carlsbad the physician above-quoted adds, that they can be employed in the diseases of the kidneys and of the bladder.

Dr. Eisl, physician to the Vienna hospital, speaks most favourably of the great benefit, which hepatic and hemorroidal patients have derived from this exported water.

Dr. Viszanek, physician to the Lunatic hospital of Vienna, has prescribed it with a remarkable success in slight cases of melancholy, proceeding from liver-obstruction, abdominal plethora and menstrual disorders. He quotes, amongst others, two cases, in which the Schlossbrunn has completely cured hepatic and uterine cases, in which the recovery has been effected by the evacuation of old infarcta.

Professor Wagner, of Leopol, relates two cases of renal and vesical calculi, in one of which, after having drunk four days only of the Schlossbrunn water, the patient had violent pains in the kidneys, which increased as often as the trial was made and prevented its further use; but in another case, after having drunk of the Schlossbrunn water during six days, a calculus as big as a pea was evacuated.

The professor himself drank of the exported water for his own arthritic complaints, and found no difference whatever, as he states, between the effects of the exported water and those which he experienced during the cure, he underwent at Carlsbad itself in the year 1844.

Dr. de Carro relates the following fact in 1848.

Among the numberless proofs, acquired during the last five years, that these waters can be sent any distance, the following fact should tranquillise those, who still believe that they soon undergo a dissolution of their constituent parts.

In the year 1846 I had here under my care Mr. Robert Wight, superintendant-surgeon of the British army and member of the *Medical Board* at Bombay. The state of his liver and bowels, after all he had suffered from the climate of India, during 25 years, and from the most violent medical treatments, was truly very bad on his arrival at Carlsbad, which he left however satisfied far beyond what he had expected. During the cure he studied with attention the nature and effects of our springs, and he assured me, that his firm intention was, on his return to Bombay, to make known, by means of the medical and other periodicals of India, my *Treatise upon the mineral springs of Carlsbad* etc. Leipzig. Ernest Fleischer, 1843. Before he left us he ordered a great quantity of Sprudel water to be sent to Bombay.

Our *Exportation Comptoir* received on the 11th. of March last from Mr. Robert Wight a letter, dated Bombay 14th. January

1848, full of interesting details upon the perfect condition in which the water arrived, upon the good effects, which it had on himself and upon the comparative expense of that exportation, effectuated in two different ways, and even upon the double analysis made by a good English chemist, settled at Bombay, the result of which was absolutely the same in both waters. In one word, Mr. Wight was so highly satisfied with his first trial, that the object of his letter is to give considerable orders for farther expeditions of waters and to repeat to the *Exportation Office* and to me, that he is now determined to do every thing in his power to teach his medical colleagues, and to encourage that practice in the British settlements of India. As it is entirely left to those who bespeak the waters, to choose any spring they please, Mr. Robert Wight ordered the Sprudel, though nothing is better proved than the perfect identity of its constituent fixed parts with our other springs. His success contradicts at least the notion that the Sprudel does not bear the exportation as well as our less warm springs. It is now positive that the additional carbonic acid gas, introduced quickly into each jar or bottle, by means of the ingenious apparatus invented by Mr. Hecht of Franzensbad, renders all our springs equally fit for exportation.

When in the year 1801, I sent from Vienna vaccine matter to Constantinople, Bagdad, Bassora, to Bombay, Goa etc. to Persia, and to the Island of Ceylon, Sumatra, etc. where it succeeded perfectly, I was certainly not aware that in the year 1846, I should have to do with te exportation of the thermal springs of Carlsbad to India.

Since 1857 the exportation of the Carlsbad water is committed to the new association, and all orders are respectfully requested to be addressed to

KNOLL AND MATTONI

AT CARLSBAD.

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